UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/622,696	11/01/2000	Stephan Bolz	051480-5016	8807

31625 7590 05/06/2004

BAKER BOTTS L.L.P.
PATENT DEPARTMENT
98 SAN JACINTO BLVD., SUITE 1500
AUSTIN, TX 78701-4039

EXAMINER	
DOLINAR, ANDREW M	

ART UNIT	PAPER NUMBER
3747	

DATE MAILED: 05/06/2004

30

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/622,696	Applicant(s) BOLZ, STEPHAN	
	Examiner Andrew M. Dolinar	Art Unit 3747	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-36* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *01 November 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 5, 2004 has been entered.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the mating plug having a cooling flange of claim 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

There is no description in the specification corresponding to the mating plug having a cooling flange of claim 19. The specification and/or claim 19 should be amended as appropriate.

There is no description in the specification corresponding to the adjusting of operational data by engine control of claim 28. The specification and/or claim 28 should be amended as appropriate.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 33 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 33 specifies "a water-repellant membrane surrounding the housing", whereas the specification describes the water-repellant membrane as "in the housing" (page 3, line 23). Therefore, claim 33 is not fully supported by the application as filed.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 17-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 17, lines 2-3, the intended scope of the limitation "for transmission of data from the sensor via an interface to an evaluating unit" is not clear since it appears to be inconsistent

with the specification, which describes the evaluating unit as part of the interface (e.g. page 3, lines 14-15).

Regarding claim 19, it is not clear how a cooling flange of a mating plug could be in thermal connection to a component of the evaluating unit in view of the lack of a description of this feature in the specification.

Claim 30 recites the limitation "the number of conductors" in line 5. There is insufficient antecedent basis for this limitation in the claim. Claim 30 is rendered further indefinite by the limitation "reduced" in line 6, since it does not define the number of conductors relative to any specific reference.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 17, 18, 20, 25-32 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patrick et al (US 6,254,750 B1) in view of Suzuki et al (US 5,869,744) and Ohba et al (US 4,668,873). Patrick et al discloses a nitrogen oxide sensor (column 8, lines 14-25). A connector having a memory device (evaluating unit) is built into the sensor (column 11, lines 37-41). Connection to an engine control device is implied at column 1, lines 26-28. Patrick et al does not expressly disclose digitization of data, a housing for the connector, a microprocessor as in claims 25 and 26, heating regulation as in claim 27, data adjustment by the engine control as in claim 28, location of the interface as in claim 29. Suzuki et al teaches

that it is known to provide an exhaust sensor with an evaluating unit (69) including an A/D converter for digitization of data and heating control, and with adjustment by the engine control (e.g. column 10, lines 46-63). The essential elements of a microprocessor are disclosed at column 7, line 60, to column 8, line 7. Ohba et al teaches that it is known to provide a sensor interface circuit integral with an electrically conductive connector housing (column 4, lines 51-60). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the sensor device of Patrick et al with an A/D converter and control circuitry, as taught by Suzuki et al, in order to provide a usable input to the memory and improved feedback control. It would have been obvious to further provide the sensor device of Patrick et al with a conductive housing, as taught by Ohba et al, in order to mount the evaluating circuitry and protect it from electrical interference. Regarding claim 29, it would have been an obvious matter of design choice to place the interface closer to the sensor than to the engine control device since this does not effect operation of the system. See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975). Regarding claim 30, the inclusion of control circuitry in the control device as taught Suzuki et al provides for reducing the number of conductors. Regarding claim 32, execution of the routine in FIG. 3 of Suzuki et al implies generation of a test signal. The performance ranges of claims 34-36 would have been an obvious matter of routine optimization since it has been held that where the general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Claims 17, 20, 21, 23-32 and 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Patrick et al (US 6,254,750 B1) in view of Suzuki et al (US 5,869,744) and Nakajima et al (US 4,963,246). Patrick et al discloses a nitrogen oxide sensor (column 8, lines

14-25). A connector having a memory device (evaluating unit) is built into the sensor (column 11, lines 37-41). Connection to an engine control device is implied at column 1, lines 26-28. Patrick et al does not expressly disclose digitization of data, a housing for the connector, connection to a system bus as in claims 23 and 24, a microprocessor as in claims 25 and 26, heating regulation as in claim 27, data adjustment by the engine control as in claim 28, and location of the interface as in claim 29. Suzuki et al teaches that it is known to provide an exhaust sensor with an evaluating unit (69) including an A/D converter for digitization of data and heating control, and with adjustment by the engine control (e.g. column 10, lines 46-63). The essential elements of a microprocessor are disclosed at column 7, line 60, to column 8, line 7. Nakajima et al teaches that it is known to provide a sensor interface circuit integral with a plug connector housing as set forth beginning at column 7, line 17, and the interface connected to a system bus 407 (FIG. 2). It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the sensor device of Patrick et al with an A/D converter and control circuitry, as taught by Suzuki et al, in order to provide a usable input to the memory and improved feedback control. It would have been obvious to further provide the sensor device of Patrick et al with a housing and connected to a system bus, as taught by Nakajima et al, in order to mount the evaluating circuitry and connect it to the control computer. Regarding claim 29, it would have been an obvious matter of design choice to place the interface closer to the sensor than to the engine control device since this does not effect operation of the system. See *In re Kuhle*, 526 F.2d 553, 188 USPQ 7 (CCPA 1975). Regarding claim 30, the inclusion of control circuitry in the control device as taught Suzuki et al provides for reducing the number of conductors. Regarding claim 32, execution of the routine in FIG. 3 of Suzuki et al implies generation of a test signal. The performance ranges of claims 34-36 would have been an obvious matter of routine optimization since it has been held that where the

general conditions of a claim are disclosed in the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation. See *In re Aller*, 220 F.2d 454, 456, 105 USPQ 233, 235 (CCPA 1955).

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Patrick et al (US 6,254,750 B1) in view of Suzuki et al (US 5,869,744) and Ohba et al (US 4,668,873) as applied to claims 17, 18, 20, 25-32 and 34-36 above, and further in view of Matsubara et al (US 5,024,534). Matsubara et al teaches that it is known to provide a sensor interface circuit with a shielded connecting line (column 2, lines 26-38). It would have been obvious to one having ordinary skill in the art at the time the invention was made to further provide the sensor device of Patrick et al with a shielded connecting line, as taught by Matsubara et al, in order to protect the circuitry from electrical interference.

Allowable Subject Matter

Claims 19 and 33 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, first and/or second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments with respect to claims 17-36 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew M. Dolinar whose telephone number is (703) 308-1948. The examiner can normally be reached on Mon. - Thu. 7:45 - 6:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on (703) 308-1946. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andrew M. Dolinar
Primary Examiner
Art Unit 3747

AMD
May 5, 2004